1 557 284

PATENT SPECIFICATION

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(54) A MOTOR VEHICLE WITH A PROTECTIVE DEVICE

(71) We, KLÖCKNER-HUMBOLDT-DEUTZ AKTIENGESELLSCHAFT, a German Body Corporate, of Köln-Deutz, German Federal Republic, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to a motor vehicle, which may be used in agriculture or forestry, having a protective device and comprising a driver's cab and/or a roll-over bar rigidly secured to a base plate which is connected to the chassis via supporting elements.

A cab in a vehicle of the aforementioned kind must be constructed so that if the vehicle overturns, or even if it is subjected to great forces, the driver's survivial space, e.g., inside the cab, is fully retained. This can be achieved by providing a suitably rigid cab or by disposing a very rigid roll-over bar over the cab. It has also been proposed to dispose a crumpling or buffer region, e.g. made of sectional sheet metal, outside the cab, so as to absorb energy through deformation if the cab suffers an impact. These methods, however, are expensive and also considerably increase the weight of the cab.

An aim of the present invention is to improve a vehicle of the above mentioned kind, while avoiding the aforementioned disadvantages, by simple means, so that the survival space is fully retained if the vehicle overturns, even if the cab or the roll-over bar is of relatively light construction.

To this end, according to the invention, a motor vehicle comprises a chassis, a base plate, a driver's cab and/or a roll-over bar rigidly secured to the base plate, and supports by which the base plate is mounted on the chassis, each support including a bracket which is made from flat material bent to a curved shape and which is plastically deformable if the vehicle should roll over.

With this construction, if the vehicle overturns, a considerable amount of the energy acting on the cab (e.g. as the result of the impact) is used up in deforming the supporting brackets. The cab can then be made less rigid, thus saving material and time in its construction.

Advantageously, in the case of a base plate supported via resilient elements, each resilient element has a plastically deformable supporting bracket disposed between it and the chassis.

An example of a tractor comprising plastically deformable supporting brackets according to the invention is described below with reference to the accompanying drawing in which:-

Figure 1 is a side view of a tractor having a base plate supported by resilient elements and supporting brackets according to the invention; and

Figure 2 is a larger-scale view of a mounting comprising a resilient element and a plastically deformable supporting bracket according to Figure 1.

Referring to the drawing, Figure 1 shows a tractor in which the entire cab 1 is disposed on a continuous base plate 2 which in turn is mounted on a vehicle chassis 4 via four resilient elements 3. As shown in Figure 2, elements 3 have an inner sleeve-like part 5 and a coaxial outer ring 6, parts 5 and 6 being interconnected by a resilient material 7, e.g. rubber, disposed in the annular space between them. Element 3 is secured under base plate 2 by screws 8 extending through part 5. Ring 6 of element 3 has a flange 9 extending radially with respect to its central axis. A curved supporting bracket 11 made of flat material bent to the curved shape is secured by screws 10 to chassis 4 under element 3. Part of element 3 projects through a recess 12 in the top part of bracket 11, and flange 9 bears on the edge of recess

12. A number of screws 13 serve as connecting elements between flange 9 and bracket 11. Brackets 11 are plastically deformable, e.g. as a result of severe stress after the vehicle overturns. The deformation uses up energy which otherwise might damage the cab or roll-over bar and endanger the driver.

Of course, it may be advantageous in some applications to replace the aforementioned bearing brackets by differently-constructed brackets, e.g. made of expanded metal.

WHAT WE CLAIM IS:-

1. A motor vehicle comprising a chassis, a base plate, a driver's cab and/or a roll-over bar rigidly secured to the base plate, and supports by which the base plate is mounted on the chassis, each support including a bracket which is made from flat material bent to a curved shape and which is plastically deformable if the vehicle should roll over.

2. A vehicle according to claim 1, in which the supports comprise resilient elements, each resilient element having a plastically deformable supporting bracket disposed between it and the chassis.

3. A motor vehicle, constructed and arranged sustantially as herein described, with reference to and as illustrated in the accompanying drawing.

BROMHEAD & CO.,
Chartered Patent Agents,
Clifford's Inn,
Fetter Lane,
LONDON EC4A 1NP.

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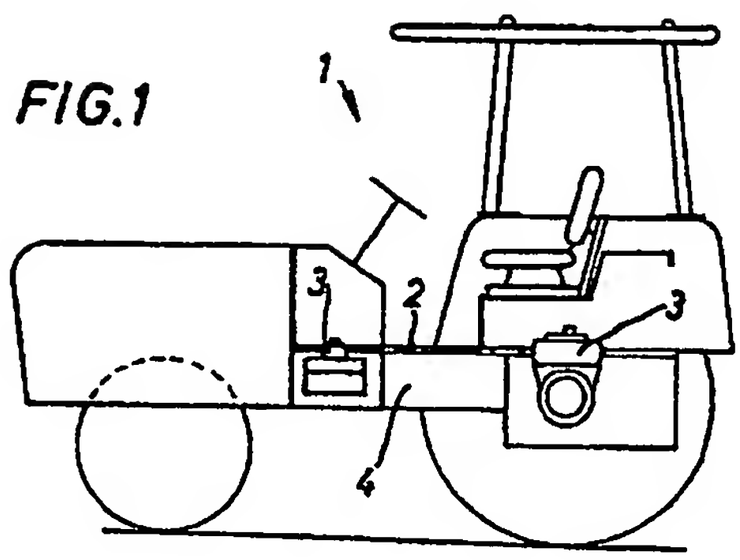
1 SHEET

FIG.1



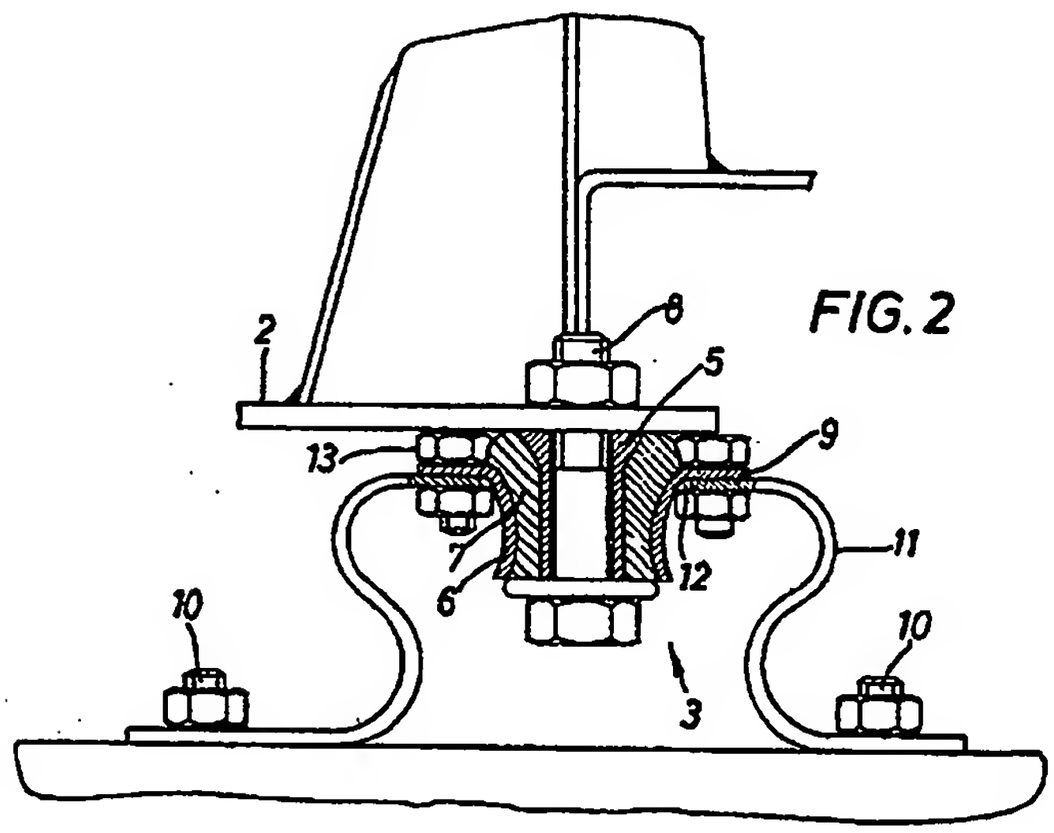


FIG.2